Inspection Report For Well: UT20736 - 06698

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466
This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: 12/10/2013
Others: Ajayi, Christopher — Time: 10:45 (am) / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 09-15		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 2/16/2006		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SWSE S9 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1660 /
Last MIT:	Pass 1/24/2011	***Annulus Pressure From Last MIT:***	1045

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
- [ ] Construction / Workover
- [ ] Plugging
- [ ] Post-Closure
- [ ] Response to Complaint
- [X] Routine
- [ ] Witness MIT
- [ ] Other

ICIS Entered
Date 12/19/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[X] Yes / [ ] No	Pressure: U: 1611 / L: ____ psig	Gauge Range: Scada psig	Gauge Owner:	[ ] EPA / [X] Operator
Annulus Gauge:	[X] Yes / [ ] No	Pressure: 0 psig	Gauge Range: opened psig	Gauge Owner:	[X] EPA / [ ] Operator
Bradenhead Gauge:	[ ] Yes / [ ] No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	[ ] EPA / [ ] Operator
Pump Gauge:	[ ] Yes / [ ] No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	[ ] EPA / [ ] Operator

Operating Status: (Select One)
- [X] Active
- [ ] Being Reworked
- [ ] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

U2 Entered
Date 12/12/13
Initial

See page 2 for photos, comments, and site conditions.

TAB | GREEN | BLUE | CBI

Inspection Report For Well: UT20736 - 06698 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____ _____ _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 200
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

FEB 16 2006

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: Authorization to Inject
Ute Tribal 09-15
UIC Permit UT20736-06698
Antelope Creek Field, Duchesne County, Utah

Dear Mr. Wall:

Thank you for submitting information pertaining to the newly constructed or converted Ute Tribal 09-15 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior To Commencing Injection" requirements for the Ute Tribal 09-15 injection well required well owner and operator Petroglyph Energy, Inc. to submit the following information to the Director:

1. A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
2. Pore pressure calculation of the proposed injection zone, and
3. completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal 09-15 enhanced recovery injection well under the conditions of the Authorization for Additional Well and UIC Area Permit UT20736-00000 as modified.

Review of the information submitted indicated that the top perforation depth authorized originally should have been 4544 ft and not 4183 ft. The original calculated maximum allowable injection pressure (MAIP) of 1530 psi was based on the 4184 ft depth. The recalculated MAIP based on the top perforation depth of 4544 ft is 1660 psi. A copy of the revised "WELL SPECIFIC REQUIREMENTS" is enclosed with this approval.

As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC
U.S. EPA Region 8, Mail Code 8ENF-UFO
999 18th Street, Suite 300
Denver, Colorado 80202-2466

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal 09-15 is **1660** psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of Authorization for Additional Well UT20736-06698 and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Dan Jackson of my staff at (303) 312-6155. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, the UIC Technical Enforcement Program may be reached by calling (800) 227-8917.

Sincerely,

Tracy M. Eagle
Director
Ground Water Program

enclosure: revised "WELL SPECIFIC REQUIREMENTS"

cc: Maxine Natchees, Acting Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer

Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

S. Elaine Willie
Environmental Coordinator
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

BLM - Vernal District
170 South 500 East
Vernal, UT 84078

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7001 0320 0005 9389 5679

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	FEB 16 2006
Restricted Delivery Fee (Endorsement Required)	UT20736 06698
Total Postage & Fees	$UT 20736-06603

Postmark Here

Sent To: Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

Street, Apt. No.; or PO Box No.

City, State, ZIP+4

PS Form 3800, January 2001 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
UT20736-06698
06603 Ute Tribal 1607
Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

FEB 16 2006

P-GW-GW-UIC N

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Dana Fellingham ☐ Agent ☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery 2-27-06

D. Is delivery address different from item 1? ☐ Yes ☐ No
If YES, enter delivery address below:

RECEIVED
MAR 01 2006
EPA Region 8
Ground Water Program

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7001 0320 0005 9389 5679

PS Form 3811, February 2004 — Domestic Return Receipt — 102595-02-M-1540

WELL-SPECIFIC REQUIREMENTS

REVISED AT AUTHORIZATION TO INJECT, FEBRUARY 2006, TO CORRECT TOP PERFORATION DEPTH AND INITIAL MAIP

Well Name: **Ute Tribal 09-15**
EPA Well ID Number: **UT20736-06698**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity test (MIT);
2. pore pressure calculation of the proposed injection zone;
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker at approximately 4092 ft, to the top of the Basal Carbonate at approximately 6104 ft.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1660 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.002 D = **4544 ft** (top perforation depth KB)
MAIP = 1660 psi

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.***

Tubing and Packer: 2-3/8" or similar size injection tubing is approved; the packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.***
The following well that penetrates the confining zone within or proximate to a 1/4 mile radius around the Ute Tribal 09-15 was evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well: Ute Tribal No. 16-02 UT20736-04412 Location: SW NW Sec 16 T5S R3W

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cement bond log and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial

responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs, and in accordance with other applicable federal, State or local law or regulation. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum, the following plugs are required:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation at **4544 ft** with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 250 ft cement plug inside of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, between approximately 2800 ft to 3050 ft.

PLUG NO. 3: Set a minimum 200 ft cement plug across the base of the Uinta Formation and top of the Green River Formation (BLM), at approximately 1676 ft.

PLUG NO. 4: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 361 ft (unless pre-existing backside cement precludes cement-squeezing this interval.)

PLUG NO. 5: Set a cement plug inside of the 5-1/2" casing, from at least 325 ft to 400 ft.

PLUG NO. 6: Set a cement plug on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 7: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227-8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Oil Spill and Chemical Release Reporting:

The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:

The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:

Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 09-15**
EPA Well ID Number: **UT20736-00000**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 1676 ft. The Uinta Formation A3 member is found at a depth of approximately 1293 ft in this well. According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water may be found at an elevation of approximately 6050 ft, or about 103 ft below ground surface at this well location.

Confining Zone: The Confining Zone at this location is approximately 211 ft of interbedded limestone and shale between the depths of 3881 ft to 4092 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 2012 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 4092 ft (KB) to the top of the Basal Carbonate Formation at 6104 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: .

Surface casing:	8-5/8" casing is set at 361 ft (KB) in a 12-1/4" hole, using 250 sacks cement circulated to the surface.
Longstring casing:	5-1/2" casing is set at 6029 ft (KB) in a 7-7/8" 6788 ft Total Depth hole with a plugged back total depth (PBTD) of 5966 ft, cemented with 1300 sacks cement. CBL analysis shows top of cement at approximately 1350 ft, and 80% bond index cement is shown from approximately 3943 down to 4013 ft and deeper.

Post-completion: a CIBP is installed at 5050 ft, and modified deeper perforations are at:
top perforation: 4544 ft **Bottom perforation: 5247 ft**

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for the one well in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well: Ute Tribal No. 16-02 UT20736-04412	Cement top: 2605 ft. This well was authorized as an injection well on January 6, 1998. Review of the CBL at that time showed adequate cement.

UIC Program Action : Auth to Inject

Permit Number: UT20736-06698 **Well Name:** Ute Tribal 09-15

Operator: Petroglyph

		Mailcode	Initials	Date
Writer: DWJ	phone: 6155	8P-W-GW	DWJ	2/9/06
UIC Review	☒ DWJ ☐ CT ☐ NW (8ENF-UFO)	8P-W-GW		
KB B Thomas, Admin	*proof*	8P-W-GW	KB	2/15
T Eagle, Dir, GWP	☐ **concur** ☐ **signature**	8P-W-GW		
L Johnson, Admin	*proof*	8P-W		
D Thomas, Dir, WP	☐ **concur** ☐ **signature**	8P-W		
M Brennan, Admin	*proof*	8-P		
S Tuber, ARA, OPRA	☐ **signature**	8-P		
★ K Bartholow	***Data Entry*** *& date stamp & mail original letter & copy of docs to Addressee*	8P-W-GW		
J Taylor	*send Public Notice*	8P-W-GW		
KB B Thomas, Admin	*mail copies to CC's*	8P-W-GW	KB	2/16
Writer	*file documents*	8P-W-GW		

LEFT SIDE
- ➤ Concurrence Copy
- ➤ Request Letter & relevant information
- ➤

RIGHT SIDE
- ➤ Response Letter
- ➤
- ➤

COMMENTS:

Please Concur - Letter inside Thanks!

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 200
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

FEB 16 2006

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

CONCURRENCE COPY

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: Authorization to Inject
Ute Tribal 09-15
UIC Permit UT20736-06698
Antelope Creek Field, Duchesne County, Utah

Dear Mr. Wall:

Thank you for submitting information pertaining to the newly constructed or converted Ute Tribal 09-15 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior To Commencing Injection" requirements for the Ute Tribal 09-15 injection well required well owner and operator Petroglyph Energy, Inc. to submit the following information to the Director:

1. A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
2. Pore pressure calculation of the proposed injection zone, and
3. completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal 09-15 enhanced recovery injection well under the conditions of the Authorization for Additional Well and UIC Area Permit UT20736-00000 as modified.

Review of the information submitted indicated that the top perforation depth authorized originally should have been 4544 ft and not 4183 ft. The original calculated maximum allowable injection pressure (MAIP) of 1530 psi was based on the 4184 ft depth. The recalculated MAIP based on the top perforation depth of 4544 ft is 1660 psi. A copy of the revised "WELL SPECIFIC REQUIREMENTS" is enclosed with this approval.

As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC
U.S. EPA Region 8, Mail Code 8ENF-UFO
999 18th Street, Suite 300
Denver, Colorado 80202-2466

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal 09-15 is **1660** psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of Authorization for Additional Well UT20736-06698 and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Dan Jackson of my staff at (303) 312-6155. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, the UIC Technical Enforcement Program may be reached by calling (800) 227-8917.

Sincerely,

Tracy M. Eagle
Director
Ground Water Program

enclosure: revised "WELL SPECIFIC REQUIREMENTS"

cc: Maxine Natchees, Acting Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer

Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

S. Elaine Willie
Environmental Coordinator
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

BLM - Vernal District
170 South 500 East
Vernal, UT 84078

OMB No. 2040-0042 Approval Expires 11/30/2014

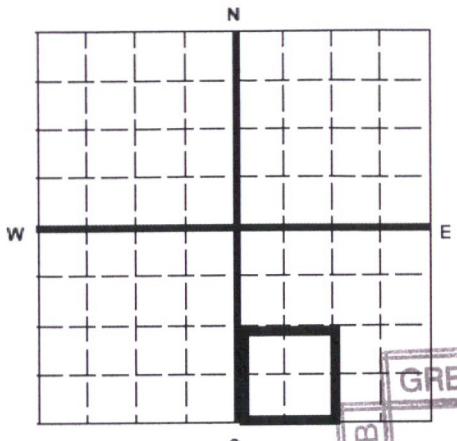
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-06698

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 9 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 550 ft. frm (N/S) S Line of quarter section
and 2000 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 3/30/17
Initial DB

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 09-15

GREEN BLUE CBI TAB 2

MONTH	YEAR	INJECTION PRESSURE AVERAGE PSIG	INJECTION PRESSURE MAXIMUM PSIG	TOTAL VOLUME INJECTED BBL	TOTAL VOLUME INJECTED MCF	TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MINIMUM PSIG	TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MAXIMUM PSIG
January	16	1555	1577	794		0	0
February	16	1566	1603	759		0	0
March	16	1594	1600	768		0	0
April	16	1587	1602	831		0	0
May	16	1582	1625	765		0	0
June	16	1560	1589	927		0	0
July	16	1592	1609	1053		0	0
August	16	1558	1625	973		0	0
September	16	1548	1597	779		0	0
October	16	1490	1555	573		0	0
November	16	1539	1552	589		0	0
December	16	1607	1636	364		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem®
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 09-15 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345306**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/25/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0008
pH:	7.90
Calculated TDS (mg/L):	5176.49
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	30.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1725.38	Chloride (Cl):	2000.00
Potassium (K):	10.90	Sulfate (SO_4):	80.00
Magnesium (Mg):	20.06	Bicarbonate (HCO_3):	1281.00
Calcium (Ca):	37.15	Carbonate (CO_3):	
Strontium (Sr):	2.04	Hydroxide(HO):	
Barium (Ba):	2.98	Acetic Acid (CH_3COO)	
Iron (Fe):	3.47	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	0.71	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.00	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.09	Bromine (Br):	
Aluminum (Al):	0.04	Silica (SiO_2):	12.71
Lithium (Li):	2.73	Calcium Carbonate ($CaCO_3$):	
Boron (B):	1.88	Phosphates (PO_4):	2.30
Silicon (Si):	5.94	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	1.01	25.04	0.91	1.55	0.00	0.00	2.06	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149.00	267.00	1.08	26.04	0.82	1.50	0.00	0.00	2.17	2.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168.00	483.00	1.19	27.41	0.75	1.45	0.00	0.00	2.30	2.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	700.00	1.30	28.61	0.69	1.41	0.00	0.00	2.42	2.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206.00	917.00	1.43	29.60	0.66	1.37	0.00	0.00	2.54	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
224.00	1133.00	1.55	30.40	0.63	1.35	0.00	0.00	2.66	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
243.00	1350.00	1.69	31.01	0.62	1.35	0.00	0.00	2.77	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262.00	1567.00	1.83	31.46	0.63	1.35	0.00	0.00	2.87	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
281.00	1783.00	1.97	31.78	0.64	1.36	0.00	0.00	2.96	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2000.00	2.11	32.01	0.66	1.38	0.00	0.00	3.05	2.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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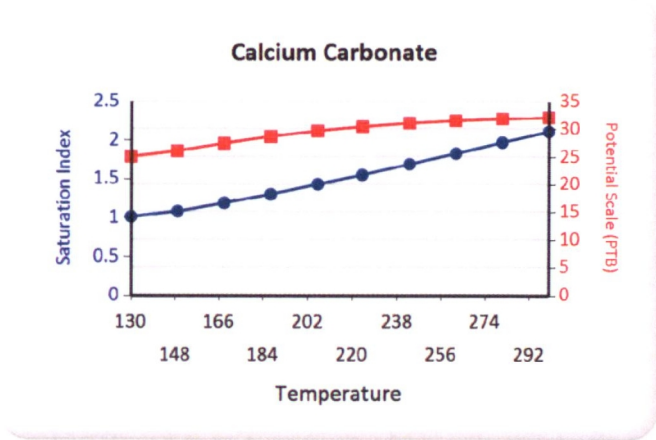
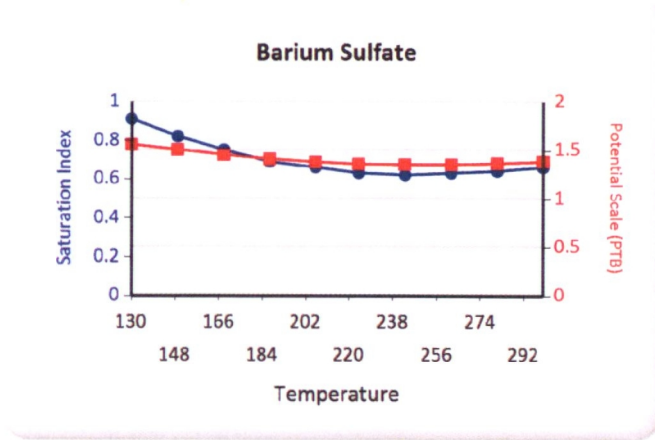
Water Analysis Report

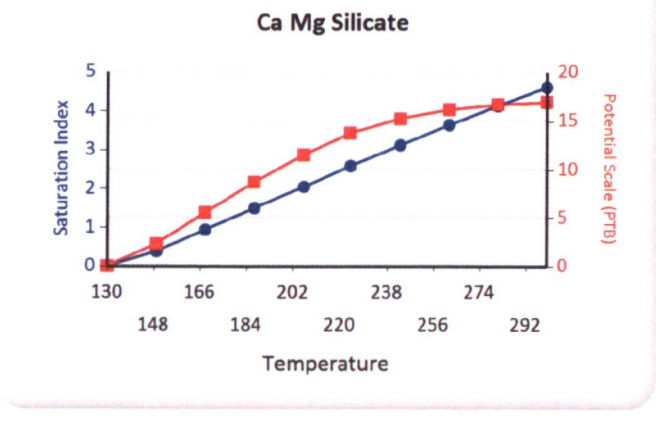
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.43	0.00	0.00	0.99	5.19	0.00	0.00	6.63	2.67
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28	0.45	0.00	0.00	1.80	9.54	0.38	2.29	7.16	2.68
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.46	0.00	0.00	2.76	14.97	0.94	5.51	7.87	2.69
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	0.47	0.00	0.00	3.71	20.16	1.50	8.68	8.58	2.70
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90	0.47	0.00	0.00	4.64	24.65	2.05	11.50	9.29	2.70
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	0.47	0.00	0.00	5.55	28.14	2.59	13.70	10.00	2.70
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	0.47	0.00	0.00	6.43	30.53	3.12	15.22	10.70	2.70
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.48	0.00	0.00	7.29	31.92	3.64	16.13	11.39	2.70
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49	0.48	0.00	0.00	8.10	32.58	4.13	16.63	12.05	2.70
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	0.48	0.00	0.00	8.88	32.83	4.61	16.89	12.68	2.70

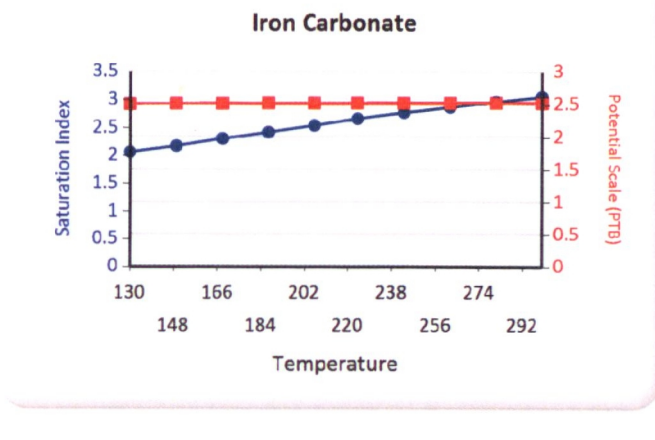
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









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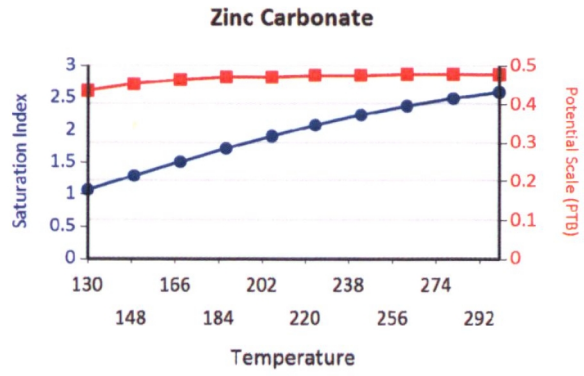
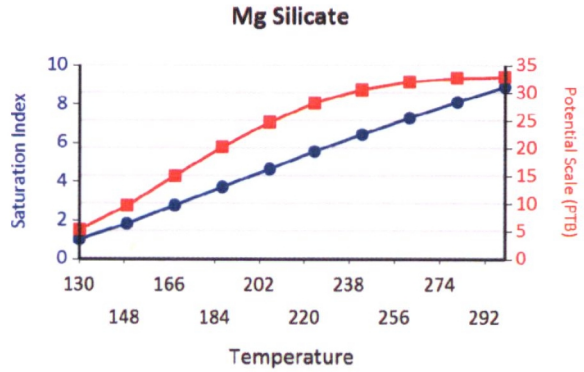
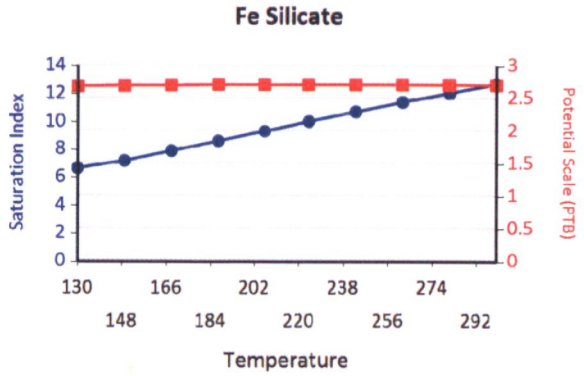
Water Analysis Report







December 14, 2016

Gary Wang or Don Breffle
Underground Injection Control Enforcement
U.S. Environmental Protection Agency
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: 5-year Mechanical Integrity Tests
Ute Tribal 09-15, 21-07, 29-01, 30-10

Mr. Wang/ Mr. Breffle:

Please find enclosed 5-year Mechanical Integrity Tests for the following wells:

- Ute Tribal 09-15 UT20736-06698
- Ute Tribal 21-07 UT20736-07116
- Ute Tribal 29-01 UT20736-04619
- Ute Tribal 30-10 UT20736-04524

If any questions, please reach me at (208) 685-9711.

Best Regards,

Nicole Colby
Manager, Land & Regulatory Compliance

U2 Entered
Date 12/21/16
Initial DS

TAB	GREEN	BLUE	CBI
		1	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 11/18/16
Test conducted by: CHAD STEVENSON
Others present: _____

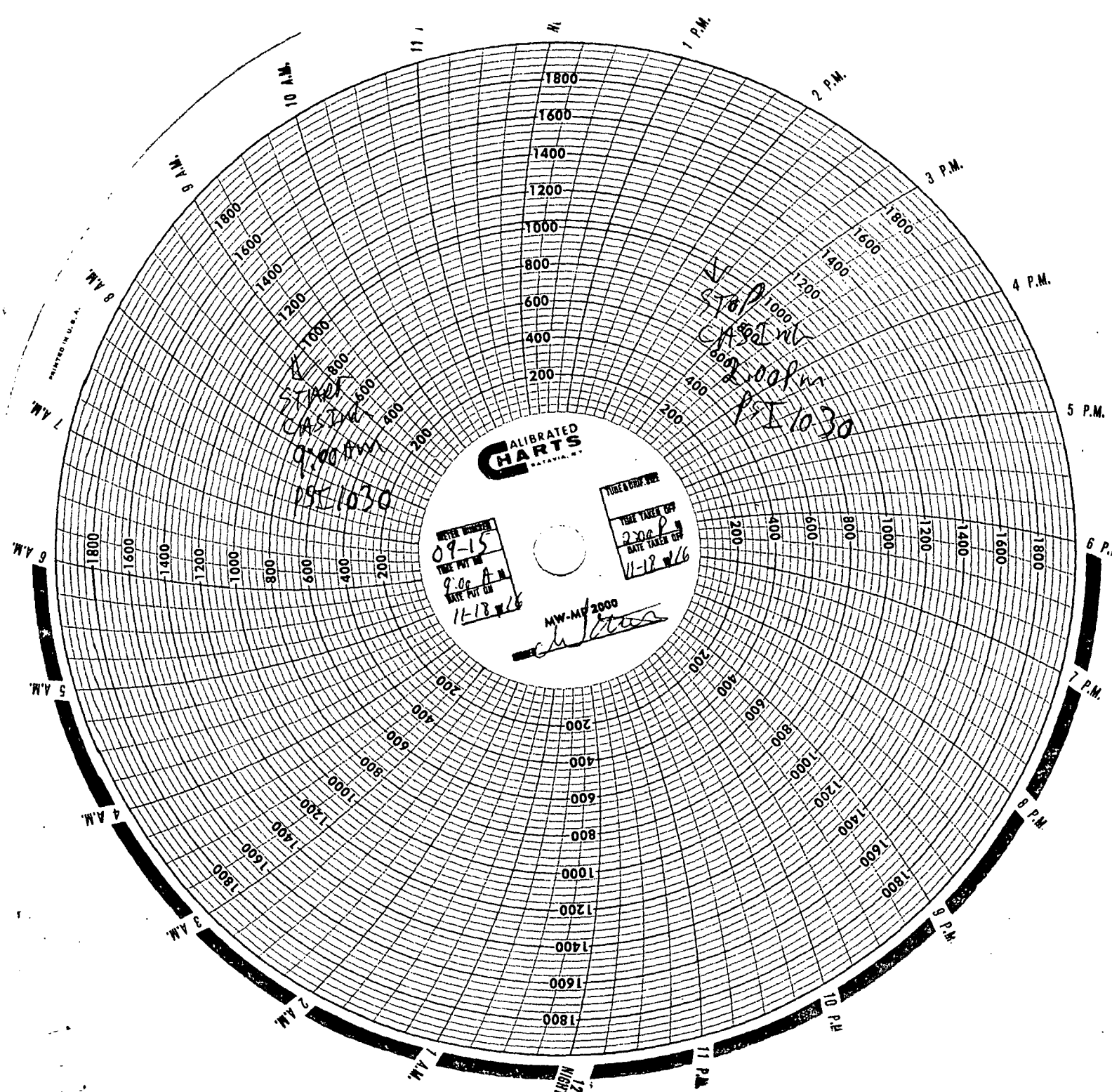
Well Name: 09-15 Type: ER SWD **Status:** AC TA UC
Field: ANTELOPE CREEK
Location: 09-15 Sec: ___ T ___ N / S R ___ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERGY
Last MIT: / / **Maximum Allowable Pressure:** _____ **PSIG**

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 24 **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	1566 psig	psig	psig
End of test pressure	1566 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	1030 psig	psig	psig
5 minutes	1030 psig	psig	psig
10 minutes	1030 psig	psig	psig
15 minutes	1030 psig	psig	psig
20 minutes	1030 psig	psig	psig
25 minutes	1030 psig	psig	psig
30 minutes	1030 psig	psig	psig
5 HOURS ~~minutes~~	1030 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ psig.


CALIBRATED CHARTS
BATAVIA, N.Y.
METER BROKEN
09-15
TIME PUT ON
9:00 A.M.
DATE PUT ON
11-18 '76
TUBE TAKEN OFF
2:00 P.M.
DATE TAKEN OFF
11-12 '76
MW-MP 2000
PRINTED IN U.S.A.
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
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10 P.M.
11 P.M.
NIGHT
1 A.M.
2 A.M.
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4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NOON

OMB No. 2040-0042 Approval Expires 11/30/2014

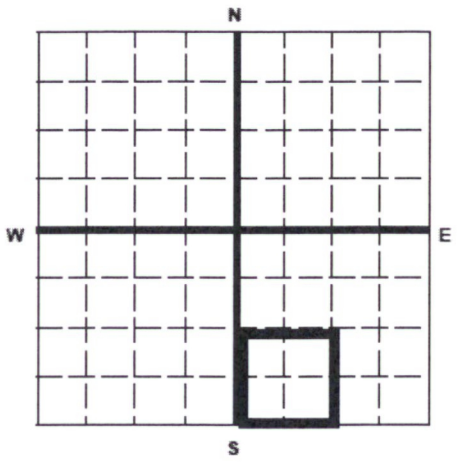
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 06698

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 9 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 550 ft. frm (N/S) S Line of quarter section
and 2000 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 3/1/16
Initial DB

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 09-15

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1527	1587	762		0	0
February	15	1580	1591	899		0	0
March	15	1595	1616	1030		0	0
April	15	1569	1604	875		0	0
May	15	1591	1612	907		0	0
June	15	1585	1600	651		0	0
July	15	1577	1596	705		0	0
August	15	1580	1635	636		0	0
September	15	1532	1574	459		0	0
October	15	1591	1615	602		0	0
November	15	1557	1592	631		0	0
December	15	1589	1627	725		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

EPA Form 7520-11 (Rev. 12-11)

TAB: GREEN | BLUE 2 | CBI

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 09-15 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327646**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/14/2016**
System Temperature 1 (°F):	**60**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**180**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**1.0010**
pH:	**7.10**
Calculated TDS (mg/L):	**5242.84**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**60.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**0.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**1535.91**	Chloride (Cl):	**2000.00**
Potassium (K):	**5.04**	Sulfate (SO_4):	**440.00**
Magnesium (Mg):	**72.59**	Bicarbonate (HCO_3):	**976.00**
Calcium (Ca):	**153.69**	Carbonate (CO_3):	
Strontium (Sr):	**4.62**	Acetic Acid (CH_3COO)	
Barium (Ba):	**1.90**	Propionic Acid (C_2H_5COO)	
Iron (Fe):	**17.92**	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	**6.76**	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	**0.49**	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	**0.07**	Silica (SiO_2):	**27.85**
Aluminum (Al):	**0.10**	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	**0.93**	Phosphates (PO_4):	**3.75**
Boron (B):	**0.18**	Oxygen (O_2):	
Silicon (Si):	**13.02**		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	**PSI**	**SI**	**PTB**	SI	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**
180.00	50.00	1.05	86.14	1.15	1.05	0.00	0.00	2.28	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.89	74.51	1.17	1.06	0.00	0.00	2.09	12.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.78	66.53	1.20	1.06	0.00	0.00	1.95	12.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.68	58.52	1.24	1.07	0.00	0.00	1.82	12.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.58	50.61	1.29	1.07	0.00	0.00	1.69	12.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.49	42.94	1.35	1.08	0.00	0.00	1.55	12.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.40	35.62	1.43	1.09	0.00	0.00	1.42	12.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.32	28.78	1.52	1.10	0.00	0.00	1.30	12.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.25	22.51	1.63	1.10	0.00	0.00	1.17	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.19	16.87	1.76	1.11	0.00	0.00	1.05	11.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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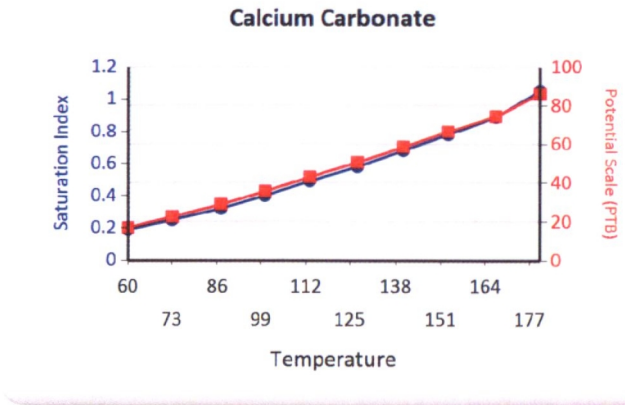
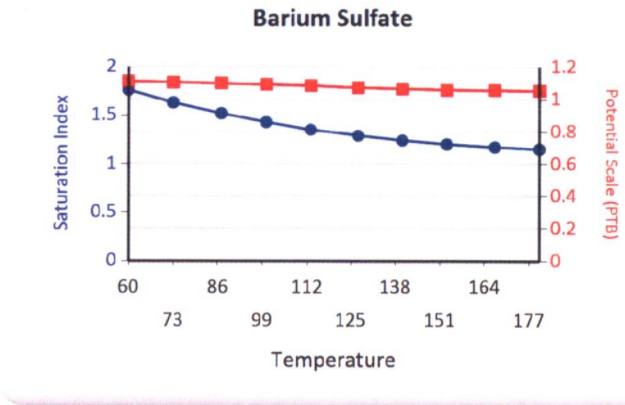
Water Analysis Report

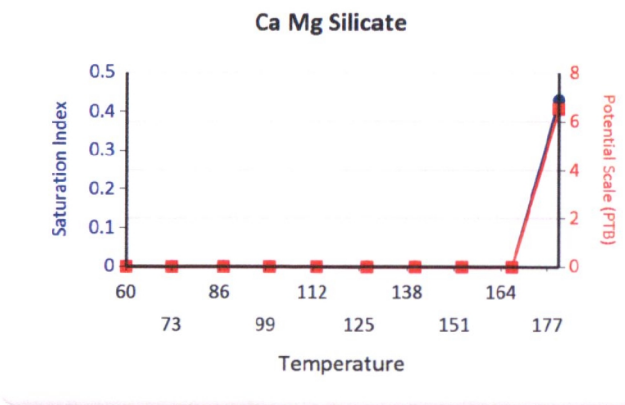
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83	4.47	0.00	0.00	1.62	24.45	0.43	6.52	7.02	13.81
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	4.42	0.00	0.00	0.47	6.84	0.00	0.00	6.02	13.67
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	4.35	0.00	0.00	0.00	0.00	0.00	0.00	5.36	13.49
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	4.24	0.00	0.00	0.00	0.00	0.00	0.00	4.71	13.21
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	4.05	0.00	0.00	0.00	0.00	0.00	0.00	4.07	12.77
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	3.73	0.00	0.00	0.00	0.00	0.00	0.00	3.44	12.11
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	3.19	0.00	0.00	0.00	0.00	0.00	0.00	2.84	11.15
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	2.24	0.00	0.00	0.00	0.00	0.00	0.00	2.25	9.82
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.57	0.00	0.00	0.00	0.00	0.00	0.00	1.67	8.09
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	5.92

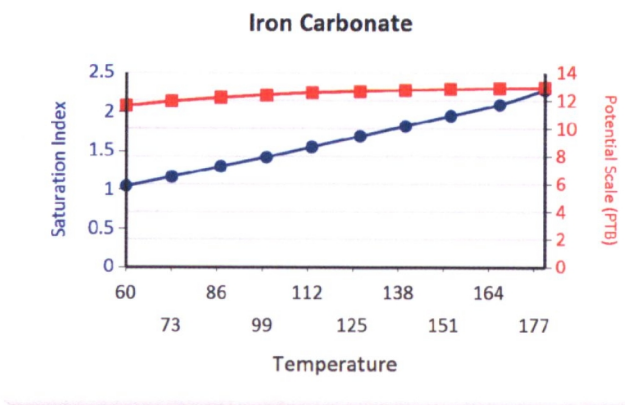
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate









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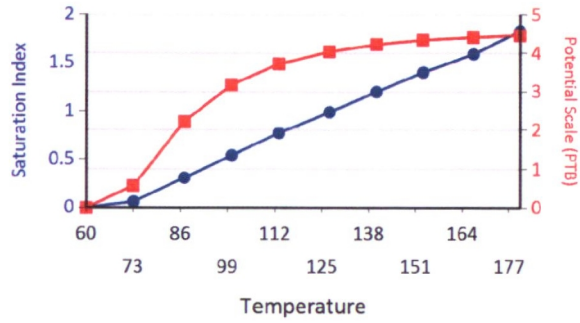
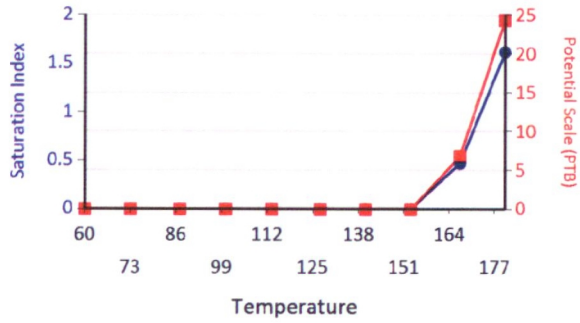
Water Analysis Report

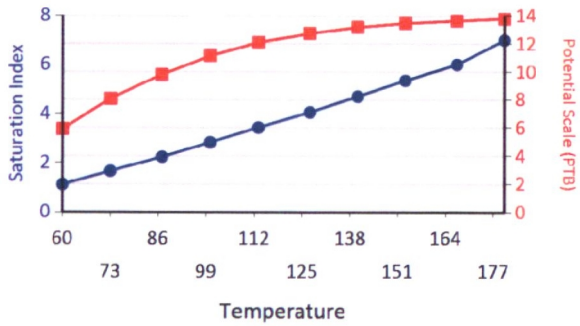
Zinc Carbonate



Mg Silicate



Fe Silicate



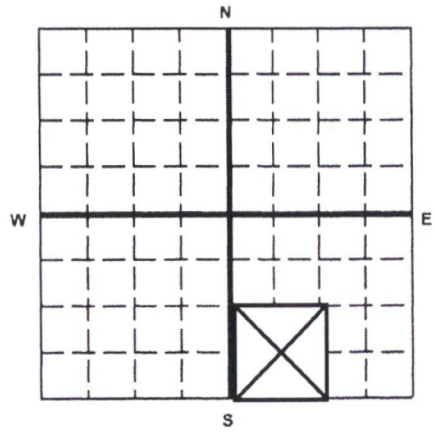
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-06698

Surface Location Description

___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 9 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 550 ft. frm (N/S) S Line of quarter section and 2000 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 09-15

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1601	1618	952		0	0
February	14	1610	1625	803		0	0
March	14	1601	1607	866		0	0
April	14	1619	1621	872		0	0
May	14	1589	1620	801		0	0
June	14	1580	1593	849		0	0
July	14	1573	1605	933		0	0
August	14	1583	1594	985		0	0
September	14	1558	1581	902		0	0
October	14	1601	1604	1069		0	0
November	14	1620	1623	1035		0	0
December	14	1591	1614	940		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

tered
2/20/15
6W

TAB | GREEN | BLUE | C
2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 09-15 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297452**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	0.9988
pH:	7.40
Calculated TDS (mg/L):	2464.75
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	16.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	175.88	Chloride (Cl):	1000.00
Potassium (K):	2.11	Sulfate (SO_4):	275.00
Magnesium (Mg):	76.66	Bicarbonate (HCO_3):	732.00
Calcium (Ca):	171.05	Carbonate (CO_3):	
Strontium (Sr):	4.43	Acetic Acid (CH_3COO)	
Barium (Ba):	0.26	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.49	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.51	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.06	Silica (SiO_2):	24.30

Notes:
B=.71 Al=.04 Li=.23

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.90	58.31	0.93	0.14	2.34	1.36	0.89	1.57	0.00	0.00	0.00	0.00	0.00	0.00	9.89	0.27
88.00	157.00	0.85	54.35	0.84	0.13	2.21	1.36	0.87	1.56	0.00	0.00	0.00	0.00	0.00	0.00	9.65	0.27
97.00	300.00	0.88	56.65	0.77	0.13	2.17	1.36	0.94	1.59	0.00	0.00	0.00	0.00	0.00	0.00	9.51	0.27
106.00	443.00	0.92	59.12	0.70	0.12	2.15	1.36	1.00	1.62	0.00	0.00	0.00	0.00	0.00	0.00	9.39	0.27
115.00	585.00	0.96	61.75	0.63	0.12	2.14	1.36	1.07	1.65	0.00	0.00	0.00	0.00	0.00	0.00	9.27	0.27
124.00	728.00	1.00	64.53	0.58	0.11	2.13	1.36	1.13	1.67	0.00	0.00	0.00	0.00	0.00	0.00	9.17	0.27
133.00	871.00	1.04	67.43	0.53	0.11	2.13	1.36	1.20	1.69	0.00	0.00	0.00	0.00	0.00	0.00	9.07	0.27
142.00	1014.00	1.09	70.45	0.48	0.11	2.13	1.36	1.26	1.71	0.00	0.00	0.00	0.00	0.00	0.00	8.98	0.27
151.00	1157.00	1.13	73.56	0.44	0.10	2.15	1.36	1.33	1.72	0.00	0.00	0.00	0.00	0.00	0.00	8.90	0.27
160.00	1300.00	1.18	76.76	0.41	0.09	2.16	1.36	1.39	1.74	0.00	0.00	0.00	0.00	0.00	0.00	8.82	0.27

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.28
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39	1.18
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	1.33
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	1.46
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.00	2.40	1.57
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.12	0.00	0.00	0.00	0.00	0.00	0.00	2.76	1.66
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.18	0.00	0.00	0.01	0.13	0.00	0.00	3.14	1.72
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.22	0.00	0.00	0.53	3.86	0.00	0.00	3.52	1.78
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.25	0.00	0.00	1.06	7.77	0.00	0.00	3.91	1.82
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.27	0.00	0.00	1.58	11.73	0.22	1.57	4.31	1.85

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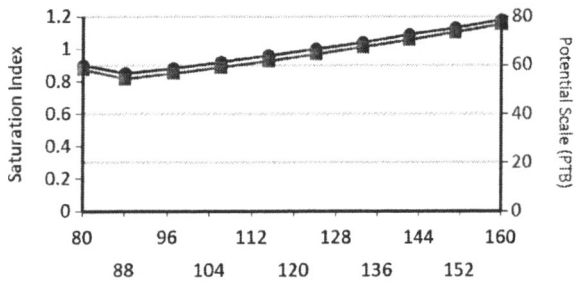
Water Analysis Report

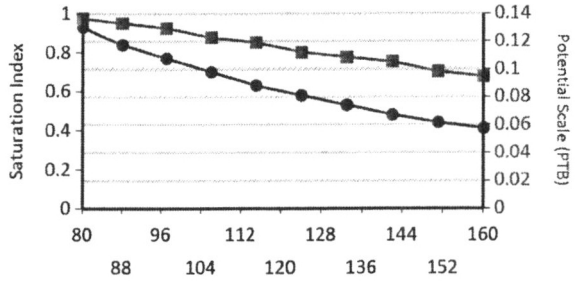
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

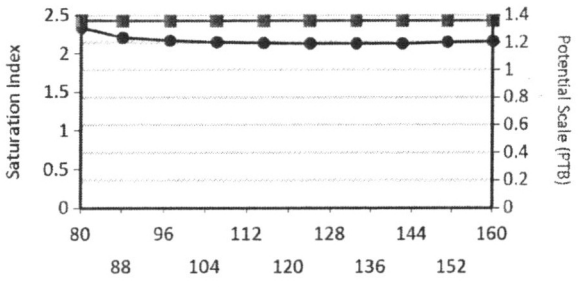
Calcium Carbonate



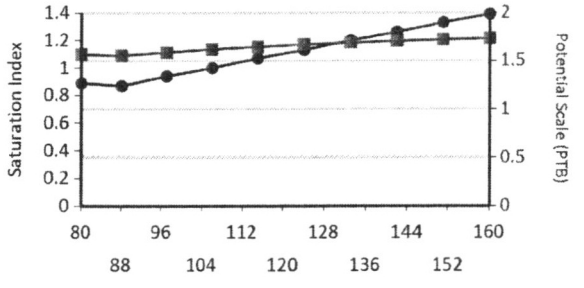
Barium Sulfate



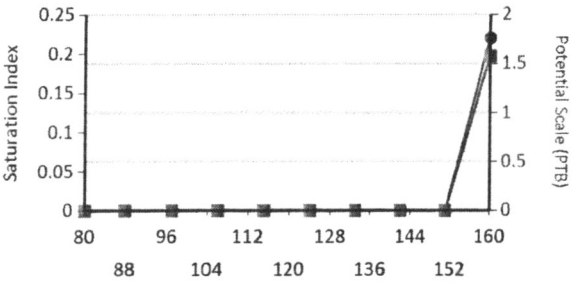
Iron Sulfide



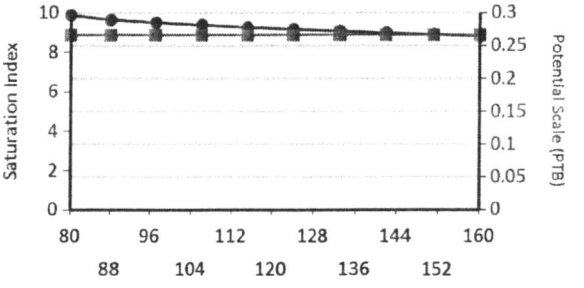
Iron Carbonate



Ca Mg Silicate



Zinc Sulfide



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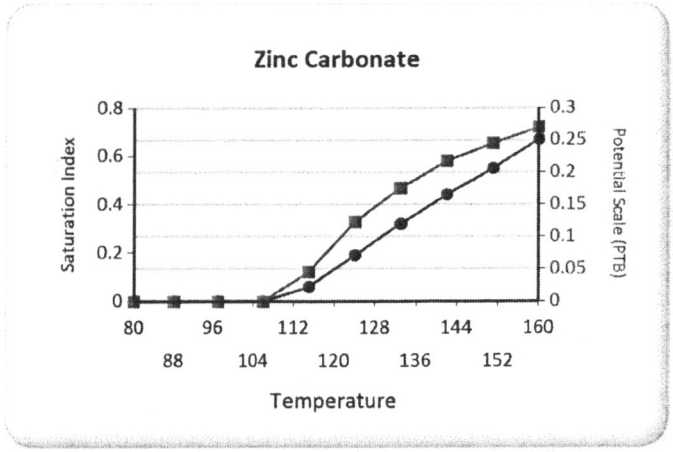
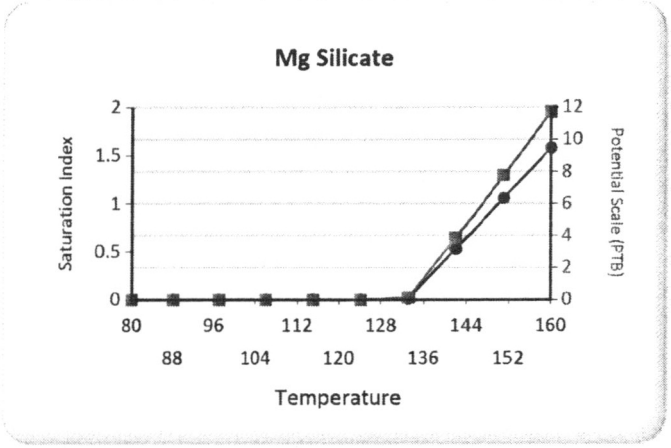
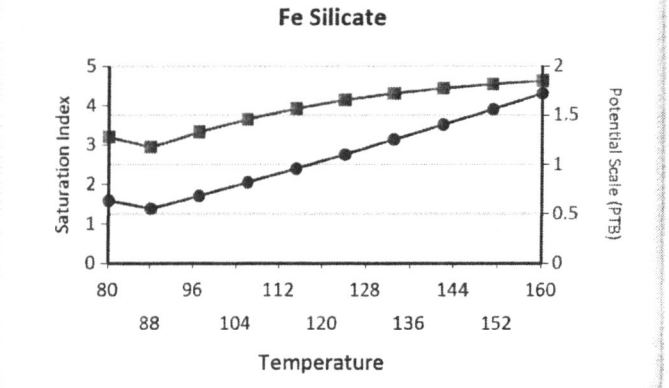
Water Analysis Report







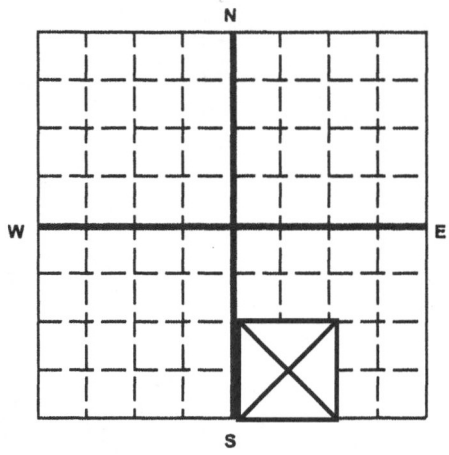
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-06698

Surface Location Description

___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 9 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 550 ft. frm (N/S) S Line of quarter section and 2000 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
☐ Brine Disposal	☐ Individual
☒ Enhanced Recovery	☒ Area
☐ Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 09-15

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1549	1561	356		0	0
February	13	1384	1577	457		0	0
March	13	1353	1618	507		0	0
April	13	1584	1620	1320		0	0
May	13	1492	1598	1066		0	0
June	13	1604	1618	1224		0	0
July	13	1587	1608	910		0	0
August	13	1585	1612	1041		0	0
September	13	1588	1609	990		0	0
October	13	1574	1622	919		0	0
November	13	1594	1607	936		0	0
December	13	1602	1613	953		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

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U2 Entered
Date 3/18/14
Initial DB

Multi-Chem Analytical Laboratory
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Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 09-15 INJ**
Sample Point: **Well head**
Sample Date: **1/8/2014**
Sample ID: **WA-262553**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/14/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	0.999
pH:	7.10
Calculated TDS (mg/L):	2375.22
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	162.00	Chloride (Cl):	1000.00
Potassium (K):	4.80	Sulfate (SO_4):	399.00
Magnesium (Mg):	71.00	Bicarbonate (HCO_3):	536.80
Calcium (Ca):	157.00	Carbonate (CO_3):	
Strontium (Sr):	4.10	Acetic Acid (CH_3COO)	
Barium (Ba):	0.70	Propionic Acid (C_2H_5COO)	
Iron (Fe):	17.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.04	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.10	Silica (SiO_2):	22.68

Notes:
B=.6 Al=.09 Li=.04

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.31	19.18	1.71	0.41	0.00	0.00	1.07	10.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.29	17.93	1.57	0.41	0.00	0.00	1.11	11.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.35	21.15	1.44	0.40	0.00	0.00	1.21	11.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	0.40	24.77	1.32	0.40	0.00	0.00	1.32	11.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	0.47	28.77	1.23	0.39	0.00	0.00	1.42	11.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	0.54	33.09	1.15	0.39	0.00	0.00	1.53	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	0.61	37.69	1.08	0.38	0.00	0.00	1.64	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	0.69	42.52	1.02	0.38	0.00	0.00	1.74	12.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	0.78	47.53	0.98	0.37	0.00	0.00	1.85	12.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	0.87	52.67	0.94	0.37	0.00	0.00	1.95	12.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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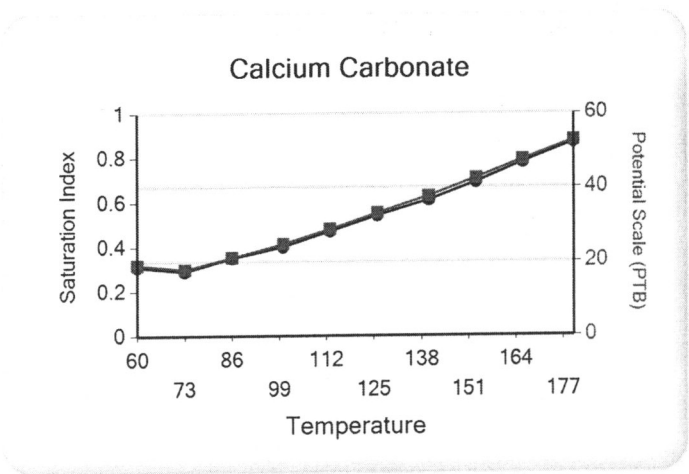
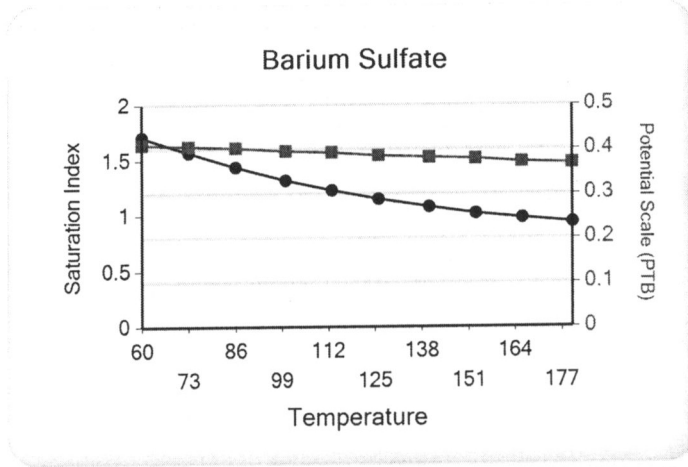
Water Analysis Report

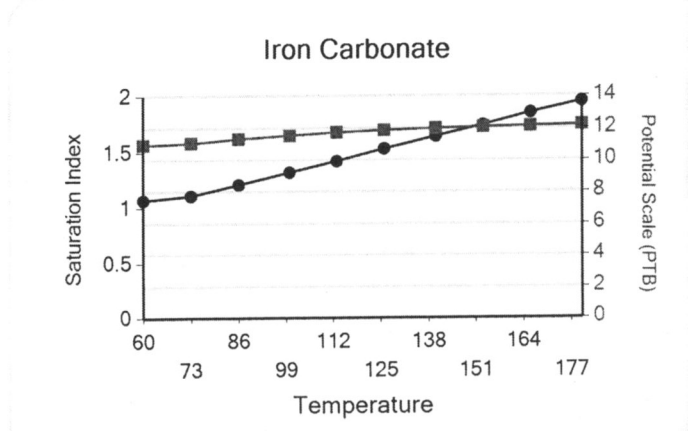
		Hemihydrate CaSO4¯0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	5.13
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	5.26
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	6.79
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	8.22
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	9.49
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.44	10.54
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.03	11.37
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.65	11.99
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	1.51	0.00	0.00	5.27	12.43
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	8.29	0.00	0.00	5.91	12.72

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Mg Silicate Fe Silicate







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Water Analysis Report